

CLAIMS APPENDIX

1.-14. (Canceled)

15. A feeder for a surface mounting device, comprising:

a feeding unit installed on a main frame, the feeding unit comprising a forward and backward rotational force generating device comprising a plurality of armature coils and a magnet unit positioned adjacent the plurality of armature coils, wherein the feeding unit is configured to carry a tape at a predetermined pitch interval;

a vinyl separation unit installed on the main frame and configured to recover vinyl removed from the tape by rotation in a first direction or to discharge the vinyl therefrom by rotation in a second direction; and

a vinyl recovery unit installed on the main frame.

16. The feeder of claim 15, wherein the vinyl separation unit utilizes rotational force generated by the feeding unit.

17. The feeder of claim 15, wherein the vinyl recover unit is connected to the vinyl separation unit by a belt and recovers the vinyl by winding the same using rotational force transferred to the vinyl separation unit by the belt in the first direction or discharges the vinyl using the rotational force transferred to the vinyl separation unit by the belt in the second direction.

18. The feeder of claim 15, wherein the magnet unit comprises a first disc member having a plurality of magnets arranged thereon.

19. The feeder of claim 18, wherein the plurality of magnets comprise a plurality of S and N polar permanent magnets.

20. The feeder of claim 18, wherein the plurality of armature coils are provided on a second disc member, and the second disc member is mounted on a drive shaft adjacent to the first disc member.

21. The feeder of claim 20, wherein a ball bearing is installed at a center portion of the second disc member.

22. The feeder of claim 20, further comprising:
a position sensing unit configured to sense a position of the magnet unit.

23. The feeder of claim 22, wherein the position sensing unit comprises a position sensing device and a position sensing disc positioned adjacent the position sensing device and mounted on the drive shaft.

24. The feeder of claim 23, wherein the position sensing device comprises a light receiving element and a light emitting element.

25. The feeder of claim 22, wherein the position sensing unit comprises a gear train in communication with a position detecting device.

26. The feeder of claim 25, wherein a first gear of the gear train is mounted on the drive shaft and a last gear of the gear train is mounted on a shaft of the position detecting device.

27. The feeder of claim 26, wherein the position detecting device comprises an encoder.

28. The feeder of claim 22, wherein the position sensing unit comprises a first gear mounted on the drive shaft, a second gear mounted on a shaft of a position detecting device, and a belt configured to transfer the backward and forward rotational force of the feeding unit from the first gear to the second gear.

29. The feeder of claim 28, wherein the position detecting unit comprises an encoder.

30. The feeder of claim 15, wherein the vinyl separation unit comprises:

a first separation unit gear in rotational communication with a feeding unit gear of the feeding unit so as to receive the forward and backward rotational force transferred thereto from the feeding unit;

a second separation unit gear in rotational communication with the first separation unit gear so as to receive the forward and backward rotational force transferred thereto from the feeding unit via the first separation unit gear; and

a vinyl discharge gear in rotational communication with the second separation unit gear and configured to rotate to carry the vinyl when it receives rotational force transferred from the second separation unit gear in a first direction, or to re-carry the vinyl when it receives rotational force from the second separation unit gear in a second direction.

31. The feeder of claim 30, wherein the vinyl recovery unit comprises:

a recovery unit gear in communication with the first separation unit gear by means of a belt so as to receive the backward and forward rotational force transferred thereto from the feeding unit via the first separation unit gear and belt; and

a recovery reel assembled at one side of the recovery unit gear, for thereby recovering the vinyl by winding it around the recovery reel or discharging the recovered vinyl to the vinyl separation unit according to the backward and forward rotational force received by the recovery unit gear.

32. A surface mounting device comprising the feeder of claim 15.